Remarks

Claims 1-17 are pending in this application. Claims 1-17 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Coash (U.S. Patent No. 4,684,853) in view of Anderson (U.S. Patent No. 5,367,537). Applicants believe that the invention is patentable.

Claim 1 recites a transmitter circuit comprising an oscillator circuit and an amplifier circuit. The oscillator circuit includes a surface acoustic wave (SAW) resonator. The oscillator circuit generates a carrier signal. The amplifier circuit receives the carrier signal and receives a data signal. The amplifier circuit generates an output signal as the carrier signal modulator with the data signal.

It is important to note that, in accordance with the invention, the amplifier circuit receives the carrier signal and receives the data signal, and the amplifier circuit generates the output signal as the carrier signal modulated with the data signal.

This is exemplified by the illustrated embodiment in Figures 1 and 2. As shown in Figure 1, the carrier signal at 26 is received by amplifier circuit 14, which also receives a data signal through input resistor 30. As shown in Figure 2, at the circuit level, carrier signal oscillator circuit 62 is coupled with capacitor C3 such that the carrier signal is modulated with the data signal at the input of amplifier circuit 64. Preferably, on/off keying is performed, but other modulation techniques may also be used.

In contrast to the invention, Coash describes a different type of transmitter with a SAW oscillator. As described by Coash and as exemplified in Figure 1, a modulation sub-circuit of the oscillator circuit includes a voltage variable capacitor 22. Voltage variable capacitor 22 responds to input voltage variations to modulate the capacitance of the feedback circuit, thereby modulating the frequency of the transmitter.

The Examiner acknowledges that Coash does not specifically teach an amplifier circuit receiving the carrier signal and receiving a data signal with the amplifier circuit generating an output signal.

The Examiner relies on Anderson as a secondary reference. However, Anderson, in contrast to the invention, describes another different type of transmitter with a SAW based modulating circuit. Anderson describes a SAW based frequency shift key modulating circuit. As exemplified in Figure 2 and as described by Anderson, a frequency shift keying modulating circuit produces a first frequency according to a SAW transducer natural resonate frequency and a second frequency according to the SAW in combination with a reactive element (26, or 25 and 26′). The frequency selected is determined by the state of a PIN switching diode (27′) in parallel with the reactive element. That is, Anderson describes the selective bypassing of a reactive element to effectively change the resonating frequency.

More specifically, a frequency shift keying modulating circuit including the SAW resonator produces either a first frequency or a second frequency depending on the state of bypass, and the generated signal is amplified and transmitted. It is critical to note that Anderson manipulates the resonating circuit to perform modulation. This reactance/bypass type approach is far different than an approach, such as recited in claim 1, in which an amplifier circuit receives the carrier signal and receives the data signal, with the amplifier circuit generating an output signal as the carrier signal modulated with the data signal.

Anderson selectively manipulates the frequency of a signal that is then applied to the base of transistor 17. Accordingly, both of the applied references are deficient. Neither reference suggests the claimed feature of the amplifier receiving the carrier and data and generating the output signal, and there is no motivation to combine these references to achieve the claimed invention.

The Examiner makes specific reference to Figure 1 of Anderson. Note that in Figure 1 of Anderson, the amplifier circuit does not receive the carrier signal and data signal

and generate an output signal as the carrier signal modulated with the data signal as recited by claim 1. In contrast, the amplifier 10 receives a signal having one of two frequencies depending on the state of bypass 27. Accordingly, there is no motivation to combine Coash and Anderson to achieve the claimed invention.

Each independent claim, namely, claims 1, 9, and 17 specifically recites in combination, the concept of the amplifier circuit receiving the carrier signal and receiving the data signal with the amplifier circuit generating an output signal as the carrier signal modulated with the data signal. This concept in the claimed combinations is not suggested by either reference applied by the Examiner or by the combination of these two references. The remaining claims are dependent claims and are also believed to be patentable at least for the reasons given with respect to the base claims.

Respectfully submitted,

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